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"Thank You for Teaching Me": The Impact of Student Gratitude on Teacher Stress and Self-Efficacy

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“Thank You for Teaching Me”: The Impact of Student Gratitude on Teacher Stress and Self-Efficacy

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Abstract

“Thank You for Teaching Me”: The Impact of Student Gratitude on Teacher Stress and Self-Efficacy

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Research continues to document the high levels of stress teachers face in the United States. Given the high demands placed on teachers and the lack of sufficient resources in schools, interventions are needed to improve resources and increase resiliency for teachers. This study proposes the implementation of a gratitude project, providing teachers with gratitude statements from their students, to address teacher stress. It is hypothesized that receiving gratitude will serve as a resource to counteract some of the demands placed on teachers. In addition, this study will test the hypothesis that self-efficacy partially mediates the relationship between receiving gratitude and teacher stress. This secondary hypothesis is supported by prior research illustrating social persuasion’s impact on self-efficacy and self-efficacy’s ability to buffer the negative impacts of stress. To evaluate the efficacy of this intervention, a quasi-experimental design with a cluster sampling waitlist control will be implemented. Cluster sampling will occur at the school level. Teachers in the waitlist control will not receive treatment until post-test data

collection has occurred for the treatment group. Paired sample t-tests will be utilized to assess if there are any statistically significant differences between waitlist control and treatment group means of post-tests, where a regression analysis will be utilized to assess if a partial mediation is occurring. Additionally, gratitude statements will be qualitatively assessed through phenomenological data analysis to identify themes to increase the understanding of what forms of gratitude are provided to teachers in this intervention.

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INTRODUCTION

Teacher stress in the United States is immensely impacting the lives of teachers and students. Teacher stress has been shown to impact a teacher's health, overall job satisfaction, and attrition rate (McCarthy, Lambert, & Reiser, 2014). Research shows that fifty percent of teachers will quit within the first five years and research indicated that one of the main reasons' teachers are leaving is the stressful working conditions they face (Skaalvik & Skaalvik, 2016). The impact of teacher stress impacts more than just teachers. In the United States, teacher turnover rates compromise the quality of education for children and cost the United States 7 billion dollars annually, forcing resources to be used to recruit and train new teachers instead of improving the quality of teaching and investing in the current school staff and students (Shakrani, 2008).

Given the large cost stress is having on teachers and school systems as a whole, a significant amount of research has been done to better understand ways to reduce stress for teachers. Teacher stress is frequently conceptualized through Lazarus & Folkman's transactional theory of stress and coping that presents stress as a result of an imbalance between one's perceived demands and resources (Lazarus & Folkman, 1984). Using this framework, teacher stress can be understood to result when a teacher has more demands placed on them than resources to manage the situation.

Given the wide array of demands placed on teachers from high workloads and time pressures to value conflicts and lack of autonomy (Shaalvik & Skaalvik, 2015), numerous interventions have been implemented throughout the US in hopes to address and counter the demands. Although interventions have been shown to have significant

impacts on reducing teacher stress and burnout, these interventions often have barriers that prevent easy or practical implementation in all schools. These barriers can be financial, lack of access to trained personnel, or requirement of substantial time from teachers. These barriers illustrate the need for new interventions targeting teacher stress that require little financial cost or requirements from teachers.

When assessing factors that decrease teacher stress, research indicated that increasing self-efficacy has a buffering impact of stress (Jerusalem & Schwarzer, 1992). Teacher self-efficacy is an "individual teacher's belief in their own ability to plan, organize, and carry out activities that are required to attain given educational goals" (Skallvik & Skallvik, 2007, p. 612). Self-efficacy can be increased in four ways, however, this study will be focused on one, social persuasion (Bandura, 1997). Social persuasion increases self-efficacy by providing positive feedback from someone who the person trusts, this feedback allows a person to have confidence in the task at hand (Schunk & DiBenedetto, 2016).

Research on social persuasion's role on teachers to this point is limited primarily to performance feedback and student evaluations (Tschannen-Moran, Hoy, & Hoy, 1998). However, the research on the benefits of performance feedback is mixed due to results frequently representing the popularity of a teacher or a student's grade in a course instead of a teacher's ability to teach (Greenwald & Gilmore, 1997, Tomasco, 1980). Overly critical and purely constructive feedback has actually been shown to have a countering impact on self-efficacy, decreasing teacher self-efficacy (Tschannen-Moran, et al., 1998). Given the importance of positively focused social persuasion in increasing

self-efficacy, this study hypothesizes that student gratitude towards teachers (SGTT) would elicit this positive social persuasion and would result in an increase in teacher self-efficacy.

Although the research on the impact of teacher's receiving gratitude is limited to date, gratitude has been shown to positively impact one's perception of work by increasing positive bias (Watkins et al., 2004), increasing prosocial behavior (Bartlett & DeSteno, 2006), as well as promoting coping skills (Wood, Joseph, & Linley, 2007; Gordon, Musher-Eizenman, Holub, & Dalrymple, 2004). When assessing the impact of receiving gratitude to those in a helping profession, a significant impact has been seen. Receiving gratitude has been shown to offset the negative impact and cost that giving to others can have on a helper (Lee, et al., 2019; Koopman, Lanaj, & Scott, 2016). With gratitude being shown to have a powerful impact for those in helping professions, this study hypotheses that gratitude will fall under the category of social persuasion and as a result impact self-efficacy.

This study proposes the intervention of SGTT will decrease teacher stress through a partial mediation of teacher self-efficacy. The relationships between receiving gratitude and teacher self-efficacy as well as self-efficacy and teacher stress have been explained above. It is hypothesized that receiving gratitude can be classified as a form of social persuasion which literature has already established having a positive relationship with self-efficacy (Bandura, 1997). Where the literature on self-efficacy has already illustrated the buffering effect self-efficacy can have on reducing stress (Jerusalem & Schwarzer, 1992). The other relationship in this proposed mediation model is between receiving

gratitude and teacher stress. This relationship is based on the foundation of Lazarus & Folkman's (1984) transactional model of stress and coping that stated that stress is a result of an imbalance where one has more demands than resources. As a result, stress can be reduced by increasing the resources one has. This study hypothesizes that SGTT will be perceived as a resource that will buffer demands placed on teachers, resulting in a decrease in stress.

This study will be conducted through a partnership with Vida Clinic, a mental health clinic that partners with Austin Independent School District (AISD) schools to provide ongoing mental health services on campuses to the district's community. Vida Clinic will provide access to 16 middle and high schools in AISD where the gratitude project will be implemented. The SGTT intervention will implement a quasi-experimental design with a cluster sampling waitlist control. All full-time secondary school teachers who teach a mainstream course (excludes: special education, librarians, administration, teacher's aids) will be included in the study.

This SGTT intervention will involve students writing gratitude statements to a teacher of their choice. These statements will be posted in a public area of the school for everyone to see as well as be individually distributed to each teacher. Teachers will all complete pre-test measures, those in the waitlist control will not receive any further intervention until after the primary post-test measures are collected at which point they will receive the same intervention the treatment group received. The treatment group will be given their personalized gratitude statements and have access to see their statements as well as all their colleagues posted throughout their schools prior to completing the

primary post-test measures. Following the wait-list control group receiving the intervention, secondary post-test measures will be collected. Measures will include the Perceived Stress Scale and the Teachers' Self-Efficacy Scale.

The data will be analyzed through paired sample t-test to assess if there are significant relationships found in the treatment group. Following this analysis, a mediation analysis will be conducted to assess if there is a partial mediation model at play as described above. The secondary post-data will test the replication of the initial results as well as assess the impact of the intervention at a longer timepoint. The gratitude statements themself will be qualitatively analyzed through phenomenological data analysis. This will aid in understanding the context and implications of the results.

The researcher hypothesizes the following results will be found: (1) a few major themes will be found in the qualitative analysis of gratitude statements, (2) SGTT will decrease perceived stress of teachers, (3) SGTT will increase teacher self-efficacy, (4) self-efficacy will partially mediate the relationship between SGTT and teacher perceived stress levels.

THE INTEGRATIVE ANALYSIS AND INTERPRETATION

With teaching being one of the highest stress jobs as well as a lack of funding for the education system in the US, there is an urgent need for low-cost interventions to be developed to decrease teacher stress (Johnson, et al., 2005). This study is working to address this need by assessing the positive impact a gratitude intervention can have on teacher's perceived stress levels. As a result, the following literature review will be covering the topics of teacher stress, teacher self-efficacy, and receiving gratitude. A brief review of the literature on each topic will be introduced as well as a specific analysis of how these topics build the scaffolding for the proposed study. This intervention proposes that Student Gratitude Towards Teachers (SGTT) will decrease teacher stress through a partial mediation of teacher self-efficacy. Given this hypothesis, this section will work to introduce the relationship between the three factors, as well as provide a more in-depth synopsis of these relationships and rationale for a mediation occurrence.

Models of Teacher Stress

Teacher stress was first defined broadly as negative and unpleasant emotions related to some aspect of a teacher's work (Kyriacou & Sutcliffe, 1977). Today teacher stress is frequently conceptualized in the literature as an imbalance between teacher's risk factors and protective factors that inhibit their ability to cope with adversity (Prilleltensky, Neff, and Bessell, 2016). Teacher stress has been commonly understood through the foundation of Lazarus and Folkman's transactional theory of stress and coping, which defines stress as the imbalance of demands and resources. When a person

is not adequately resourced to manage the demands required of them, it results in a stress response (Lazarus & Folkman, 1984). This model is considered to be a “balance” model of stress where stress is understood as an outcome of the relationship between a person and their environment (Meurs & Perrewé, 2011). If a person does not have enough resources to balance the demands they have placed on them, they will perceive their situation as stressful. This model indicates a person can have a consistent amount of demands but with the addition of resources, demands that once may have been seen as stress-inducing will no longer be as they have enough resources to manage them.

This transactional model of stress focuses on cognitive appraisal (Lazarus & Folkman, 1987). Cognitive appraisal illustrates the importance of an individual's perception of their experiences in the manifestation of stress, as it focuses on a person’s assessment of how a situation will impact their personal welfare. As a result, in the transactional theory of stress if an individual appraises their situation to have more demands then resources then they are likely to experience stress (Lazarus & Folkman, 1987). This model illustrates the importance of an individuals’ ability to balance perceived demands with the resources they have available to them, as well as highlights the importance of one’s perception of a situation. For instance, two people can appraise the same situation differently. In the school setting, it is possible for one teacher to appraise a given curriculum as a resource because they see it as less planning they will have to do. However, another teacher could see the same curriculum as a demand because it is filled with different requirements that they have to teach their students. Given how important one’s perception of the situation is within the stress literature, teacher stress

will be evaluated in this study as perceived teacher stress. Perceived stress is "the degree to which individuals appraise situations in their lives as stressful" (Cohen et al., 1983, p. 385). This will allow each teacher to individually report their appraised stress level and take into account the teacher perceived situation versus making assumptions about how a situation should be impacting a teacher's stress levels.

Past research has found that the majority of demands on teachers can be categorized into the following categories: high workloads and time pressure, adapting to students' needs, disruptive student behavior, value conflicts and lack of autonomy, lack of status, and teamwork (Shaalvik & Skaalvik, 2015). The category of high workloads and time pressures represents teachers' being required to complete too many tasks with too little time in the day, as well as, a lack of time or relaxation at work. Adapting to students' needs category represents added stress caused by having to teach a diverse classroom of students with different abilities without proper resources to do so. The disruptive student behavior category involves added stress teachers face when disciplining students and dealing with misbehaviors. The category of value conflicts and lack of autonomy involves teachers' frustration and mismatch with school or national level curriculum decisions and evaluative measures. Teachers express struggles with a lack of status due to parents looking down upon them as well as negative media portrayals of teachers. The final category, teamwork, involves the challenges and additional stress from disagreements between colleagues or staff members within the school (Shaalvik & Shaalvik, 2015).

Having such a wide array of demands placed on them, it is essential for teachers to receive adequate resources to be able to cope with the stressors in their work environment. Perceived resources for teachers have been shown to vary from additional adults in the classroom to having necessary supplies and materials (Lambert, McCarthy, O'donnell, & Wang, 2009). Although all teachers do receive some extent of resources, the high levels of teacher stress seen today highlight the deficit in resources still occurring.

Without adequate interventions, teacher stress can result in negative impacts on teacher health and job satisfaction, as well as increase teacher turnover (McCarthy, et al., 2014; Klassen & Chiu, 2010). The link between teachers' stress and psychological distress is well documented in the literature (Montgomery & Rupp, 2005; Hakanen, Bakker, & Schaufeli, 2006). Stressed teachers have been shown to have negative impacts on student's learning, have decreased teaching effectiveness, and have increased exhaustion (Briner & Dewberry, 2007; Jennings & Greenberg, 2009). Prolonged exposure to workplace stress can result in burnout (Maslach, Schaufeli, & Leiter, 2001). As a result, teachers who are unable to cope successfully with the stressors of their jobs frequently experience burnout as a reaction to their chronic stress (Jennett et al., 2003). Burnout is experienced as emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach, Jackson, & Leiter, 1986). The literature on teacher burnout is expansive and has established relationships between teacher burnout and health factors, job satisfaction, teacher motivation, and teacher self-efficacy (Hakanen, et al., 2006; Schaufeli & Salanova, 2007; Leung & Lee, 2006, Skaalvik & Skaalvik, 2007)

Secondary school teachers in the United States have been shown to face additional demands relative to their peers in primary schools, leading to an even higher deficit of resources, which can result in high-stress levels. Given the typically larger and more complex departmental structures, these teachers frequently face communication and cooperation challenges (Flannery, Frank, Kato, Doren, Fenning, 2013). In addition, these teachers have an additional responsibility of preparing students for graduation and pressure to ensure students will be successful post-graduation (Feuerborn, Wallace, & Tyre, 2016). Overall, research indicates that secondary school teachers are less satisfied than their peers teaching elementary school (Perie & Baker, 1997). Although interventions to increase resources for all teachers are needed, these additional demands placed on secondary school teachers highlight the necessity for these teachers to receive interventions to decrease their risk for stress.

Teacher Interventions

Previous research has shown multiple forms of interventions to be effective at decreasing stress and even teacher burnout including teacher groups, cognitive behavioral therapy, mindfulness, social-emotional skills, psychoeducation, social support, and professional development (Reiser, Murphy, & McCarthy, 2016; Iancu, Rusu, Maroiu, Pacurar, & Maricutoiu, 2018). Mindfulness is a popular resource to aid in reducing teachers' job stress and burnout (Reiser, et al., 2016). It has been shown to increase occupational self-compassion, focus, and working memory, as well as decrease occupational stress and burnout (Roeser et al., 2013). These mindfulness interventions are frequently introduced to teachers in group settings or groups which have been shown to

produce a reduction in stress (Reiser, et al., 2016). However, groups in themselves also provide an additional resource to teachers in creating a community of shared experiences, processing situations, and receiving encouragement (Reiser, et al., 2016). Groups are also commonly used to provide resources as well as psychoeducation for teachers. More specifically, there is a movement towards incorporating trauma-informed care practices into teacher work to provide teachers with a better understanding of where their student's behavior is coming from (Eyal, Bauer, Playfair, & McCarthy, 2019).

Although these interventions have been shown to have significant impacts on reducing teacher stress and burnout, these interventions frequently require financial means, expertly trained personnel, or substantial time from teachers. These requirements can create barriers to prevent successful implementation for many schools and teachers. Lack of substantial federal or state funding for schools leads to tight budgets that frequently do not allow for the allocation of funds to be focused on teacher stress interventions. Other interventions require teachers to take time out of their day to participate in psychoeducation or group interventions. This can lead to a decreased number of teachers utilizing interventions. Literature indicates teacher burnout is negatively correlated with procedural fidelity of intervention research, indicating the relationship between highly stressed teachers and not completing interventions (Wehby, Maggin, Partin, & Robertson, 2012). This is consistent with what the researcher has anecdotally seen in previous work, teachers who have the highest levels of stress do not participate in demanding interventions due to the lack of time and energy they are already struggling to manage. As a result, interventions to address teacher stress are needed that

do not require time or energy demands to be placed on teachers, nor significant financial costs nor specifically trained personnel demands to schools.

Although a substantial amount of research works to address teacher stress, and more specifically burnout, the literature is still unclear on the best approach of interventions to decrease teacher stress as no one approach has been accepted (Lambert & McCarthy, 2006). The majority of studies currently focus on the systemic issues that are occurring at the school or even state levels, where little is being focused on the individual level. However, when the origin of teacher stress is examined, it appears most variances were not accounted for at the school level, but instead at the individual level; indicating that there are a large number of differences between teachers who work within the same school building. This suggests that the personal balance of demands and resources are most predictive in teacher stress (McCarthy, Lambert, O'Donnell, & Melendres, 2009). Given this, it is important to understand interventions that address individual teacher factors that improve teachers' ability to handle the demands their jobs require of them. One factor that has been shown to directly impact teacher stress is self-efficacy which will be explored further in the next section. Increased self-efficacy is shown to benefit teachers by decreasing stress levels, where teachers with low self-efficacy showed increased stress levels (Betoret, 2006; Klassen & Chiu, 2010).

Teacher Self-Efficacy and Stress

Low teacher self-efficacy threatens a teacher's identity and feelings of competency at their job (Skallvik & Shallvik, 2007). Self-efficacy is defined as a person's perception of their ability to succeed or learn a designated task and is a core

aspect of the social-cognitive theory (Bandura, 1997). Bandura hypothesized that self-efficacy could predict the level of effort and how long someone will persist in a task. Self-efficacy application specifically into the educator settings is known as teacher self-efficacy. Teacher self-efficacy is defined as an "individual teachers' beliefs in their own ability to plan, organize, and carry out activities that are required to attain given educational goals" (Skallvik & Skallvik, 2007, p. 612).

Teacher self-efficacy is understood to be made up of six factors: instruction, adapting education to individual students' needs, motivating students, keeping discipline, cooperating with colleagues and parents, and coping with changes and challenges (Skallvik & Skallvik, 2007). Instruction is a teacher's ability to explain and teach a subject matter in a way that allows a child to learn, where adapting education to individual student's needs is a teacher's ability to challenge all students in a mixed ability classroom individually and adapt lessons to meet the needs of all students. Motivating students involves a teacher's ability to influence students to want to learn, where keeping discipline is a teacher's ability to get students to follow the classroom rules. Outside of student interactions teachers' ability to cooperate with colleagues and patents is assessed, this involves informing and making decisions to constructively handle issues with these other adults within students' lives or the education system. The last factor, coping with change and challenges involves a teacher's ability to handle school and systemic changes that impact the rules and policies surrounding a teacher's job (Skallvik & Skallvik, 2007). These factors of self-efficacy aid in further understanding the correlation between teacher self-efficacy and teacher stress as these six factors highlight demands or resources that

teachers can experience. For instance, adapting education to individual students' needs is one of the major impacts of teacher self-efficacy. If a teacher has additional lesson plans available to them or teacher aids in the room to help, a teacher is able to feel more confident in their ability to adapt learning and as a result, their teacher self-efficacy is increased. However, on the other side if a teacher has multiple demands placed on them, for example having multiple students who need different specialized learning plans without enough resources to meet these needs a teacher will experience stress as explained through the transactional model of stress and coping and also have low teacher self-efficacy.

Although general self-efficacy typically remains relatively stable, research shows that given the impact of professional experience as well as the variability teachers can experience year to year, teacher self-efficacy can vary over time (Hoy & Spero, 2005). Although the research is not unanimous on the progression of teacher self-efficacy throughout a teacher's career, research shows an initial increase with experience and then a drop in self-efficacy for teachers with ten or more years of experience (Hoy & Spero, 2005; Klassen & Chiu, 2010). Klassen & Chiu (2010) proposed that self-efficacy initially increases as teachers gain a grasp on teaching and "stabilized" in their career as a whole, however, for teachers late-career teacher's their self-efficacy decreases as they fall into a period of "disengagement" that comes with a lack of motivation. This indicates that self-efficacy is not linear like it once was thought to be and interventions for teachers of all experience levels can be beneficial (Wolters & Daugherty, 2007).

Low teacher self-efficacy has been shown to be correlated with increased defense mechanisms, depersonalization, burnout, and heightened emotional exhaustion (Skallvik & Shallvik, 2007). Behaviorally, high self-efficacy has been linked to increased subject knowledge and effective teaching (Muijs & Reynolds, 2002). In addition to impacting teachers, low teacher self-efficacy has been shown to negatively impact student achievement and be related to lower student self-efficacy (Ross, 1992; Anderson, Greene, & Loewen 1988). Where increased self-efficacy has shown to result in higher student standardized test scores (Muijs & Reynolds, 2002).

Self-efficacy is acquired through a person's previous performances, vicarious experiences, social persuasion, and physiological indexes (Bandura, 1997). Previous performances provide the individual with an indicator of their past ability and allow them to gauge if they will be successful at the task at hand. Vicarious experiences allow a person to assess their own possible success by observing others' experiences and using comparison (Schunk & DiBenedetto, 2016). Physiological indexes can impact one's self-efficacy as people correlate their past failures or successes with physiological responses such as fatigue, heart rate, or sweating (Skaalvik & Skaalvik, 2007). Social persuasion allows people to gain self-efficacy through positive feedback from others, as long as it is from a person they trust and is believable (Schunk & DiBenedetto, 2016). For the purpose of this study, the acquisition of self-efficacy through social persuasion will be focused on.

The social persuasion pillar of self-efficacy is focused on since the intervention of SGTTs is hypothesized by the researcher to be perceived as a form of social persuasion in

this study. As one of the four factors that have been shown to impact a person's self-efficacy, social persuasion has been shown to directly increase a person's efforts in a specific task and well as aid in maintaining current efforts. This drive and motivation created by social persuasion are hypothesized to give people enough of a boost in self-efficacy that they will try hard enough, which frequently results in success (Bandura, 2010). Social persuasion for teachers has been found to provide encouragement and provide personal feedback. Performance feedback that highlights the positive skills and abilities of teachers early in their careers has been shown to emphasize positive self-efficacy beliefs (Tschannen-Moran, et al., 1998). Social persuasion has also been found to impact teachers of all experience levels through providing teachers with information on how well they are teaching as well as providing them with social comparison. Information from the administration, peers, and students helps a teacher gain insight into how their teaching is meeting the demands of specific curriculum requirements if they are achieving adequate outcomes, and how they compare to their peers (Tschannen-Moran, et al., 1998). However, critical or overly constructive feedback has been shown to have the opposite impact and result in a decrease in teacher self-efficacy (Tschannen-Moran, et al., 1998). Given the negative impact, that harsh or negatively focused feedback can cause to teacher self-efficacy eliciting gratitudes might be a way to elicit positive feedback and as a result increase teacher self-efficacy.

Receiving Gratitude as a Teacher Stress Intervention

Gratitude is defined throughout the literature in a variety of ways, however, for the purposes of this paper is understood as a "subjective felt sense of wonder,

thankfulness and appreciation" (pp. 139, Chan, 2010). In this study, researchers aim to look at the impact of Student Gratitude Towards Teachers (SGTT). Currently, the research examining the relationship between receiving gratitude from students and perceived stress is minimal. However, gratitude has been shown to positively impact one's perception of work by increasing positive bias (Watkins et al., 2004), increasing prosocial behavior (Bartlett & DeSteno, 2006), as well as promoting coping skills (Wood, et al., 2007; Gordon, et al., 2004). Bartlett and DeSteno (2006) uncovered the persuasive impact of receiving gratitude. Their research demonstrated that gratitude can lead one to increase their effort in a situation even when this effort is negatively impacting oneself. Where Wood, et al. (2007) highlight the correlation between gratitude and healthy copy skills. They positively correlated gratitude with active coping, positive reinterpretation and growth, and social support, and stated that the coping style partially mediated the relationship between gratitude and stress (Wood, et al., 2007).

Helping others is seen to tax a person and come with personal costs (Koopman, et al., 2016). However, Lee et al. (2019) illustrated that gratitude statements can offset these negative impacts and increase a helper's perceived well-being. Indeed, helping professions receiving gratitude has been shown to be a "novel mechanism that links helping behavior to helper's well being" (Lee, Bradburn, Johnson, Lin, & Chang, 2019, pg 206). This research shows the importance of the social exchange process that occurs when a helper receives gratitude for what they are doing. As well, it also illustrated that reactive behaviors were more beneficial for helpers then proactive behaviors, meaning that being thanked by someone who you have done something for is more powerful than

just being thanked for your work in general. This indicates the importance of helpers receiving graduates from those they directly help (Lee, et. al., 2019).

To date, the literature on the topic of teachers receiving gratitude is limited to work in Hong Kong that showed self-gratitude interventions to be effective in reducing burnout in Chinese school teachers (Chan, 2010). In this study, Chan (2010) utilized an eight-week self-gratitude intervention that involved teachers keeping a weekly log of good things that had happened to them. The self-gratitude intervention correlated negatively with two components of burnout, depersonalization and emotional exhaustion (Chan, 2010). Given the limited research currently present on the impact of gratitude on teacher's this research hopes to expand the research and develop a better understanding of the impact gratitude can have on teachers. Chan's (2010) research worked to establish a relationship between gratitude and stress for teachers. However, he looked at the impact of self-gratitude and not receiving gratitude from another. There is no current research on the impact of teachers receiving gratitude from students, although the closest literature that can be analyzed is research done on student evaluations of teachers. Student evaluations are a controversial practice, as research shows that students frequently are unable to accurately evaluate their teacher's performance and instead they become personality contests (Tomasco, 1980). Further, teacher evaluations have been shown to correlate with students' grades in the course as well as the perceived amount of work they were required to do for a course (Greenwald & Gilmore, 1997). However, the evidence does suggest that student evaluations provide beneficial information to teachers on effective aspects of their teaching, how focused they are on their students, and the passion

and mastery of their course topic they are presenting (Stockham & Amann, 1994). Given the aspects of student feedback explained above, it is expected that gratitude from students could eliminate the negative bias previously seen with teacher performance reviews and maintain some of the positives impacts. This would be due to the manner in which the gratitudes are collected where students can nominate a teacher to write about and are not forced to write about a specific teacher they might not have a positive connection with.

Prior Work and Partnership

This study will be implemented through collaboration with Vida Clinic, a mental health clinic that provides ongoing mental health services on school campuses. Vida clinic works to provide a holistic approach to mental health on K-12 campuses in the Austin Independent School District (AISD) by serving all members of the community including students, teachers, parents, and administrators. Vida Clinic works off the ecological model which Bronferbrenner (1977) coined where one works to understand not just the person in isolation but also their environment and social system that plays a role in their experiences. Ecological models have been proposed as effective ways to target mental health for students, specifically, those living in poverty (Atkins, Adil, Jackson, McKay, & Bell, 2000; Cappella, Frazier, Atkins, Schoenwald, & Glisson, 2008). Atkins et al., (2000) highlighted the importance of integrating families and teachers in the mental health work of students, allowing support and understanding at all levels of a child's life. There are limited examples of this work integrated throughout a whole school, however, the University of California San Francisco's Healthy Environments and

Response to Trauma in Schools (HEARTS) program does approaches student's through a whole-school level approach (Dorado, Martinez, McArthur, & Leibovitz, 2016). This approach includes interventions for teachers including crisis management, support and treatment for stress and burnout, and additional training and practices (Dorado et al., 2016). This work indicates the importance of not just the teacher's experience, but also provides context and understanding of students through trauma-informed care training (Dorado et al., 2016). As Vida Clinic has a similar whole school approach, it is expected that this intervention for teachers will be a part of a greater puzzle to address teacher and student mental health.

Vida Clinic has an established working relationship with the Educational Psychology Doctoral Students at the University of Texas at Austin has allowed for collaborative teacher stress intervention research opportunities (Eyal, Bauer, Playfair, McCarthy, 2019). Through this partnership, doctoral students have designed, implemented, and researched supplemental interventions and resources for teachers. This collection of interventions and resources is presented to schools as the Teacher Wellness Institute where multiple interventions can be offered and tailored to create a holistic approach to tackle teacher stress on school campuses. As a result, schools are able to select interventions that best fit the concerns and culture of their school. Interventions offered are implemented at the individual, group, and school-wide levels. The individual-level offers one-on-one counseling and coaching to the teachers, where the group level offers mindfulness, psychoeducation, and support groups. The school-wide level currently offers trauma-informed care psychoeducation seminars that are presented at

large staff meetings. This proposed intervention would fall into this school-wide level, as it would be providing gratitude statements to all teachers within the school.

Vida Clinic has used gratitude statements previously to boost morale and improve school cultures at a few of their schools. Although the framework and collection of the gratitude statements remain consistent in this proposed project, no data has been collected prior to this study on the impact of these statements on teachers. The Vida Clinic did collect qualitative data on the content of the gratitude statements in the past, however, they did not analyze the data for themes.

The primary researcher of this study had the opportunity to aid in Vida Clinics' implementation of gratitude statements at a middle school in Austin Independent School District in Spring 2019. In this collection of gratitude statements, 415 statements were collected from students to their teachers. The researcher conducted a preliminary analysis of the data Vida Clinic collected by randomly selecting 20 gratitude statements to analyze using a phenomenological qualitative approach. In analyzing the content of these gratitude statements it seems that six clear themes arose including teachers' personality, teachers' providing motivation or inspiration to students, teacher's being a source of social support for a student, teachers' ability to control their classrooms or hold standards for their students, teachers' utilizing successful teaching styles or being good at introducing topics in a way the students understand, and general words of gratitude and compliments. In order to provide transparency on the coding of themes, a few examples of each code are provided in figure 1.

These statements were also able to inform the researcher on the ability of middle schoolers to be able to write thoughtful and specific gratitude statements to their teachers, as only 3 statements had to be removed due to inappropriate content. In addition, this experience allowed the researcher to better understand and develop the best implementation strategy for this intervention.

Theme	Example 1	Example 2
Personality	"She is very kind and caring."	"You always make me laugh."
Motivation/ Inspiration	"She made me interested in Art"	"He makes me do my best by grading my papers really hard."
Supportive	"really helps you with your problems"	"Always there if I am having trouble"
Classroom Control/ Hold Standards	"Strict when needed"	"serious teacher in times I act out"
General Gratitude/Compliment	"Thank you for everything"	"by far my favorite teacher"
Successful Teaching Style	"makes me answer questions myself, instead of helping me"	"Your stype of teaching is creative and unique"

Figure 1. Examples of statements in each gratitude statement theme.

The Current Study and Proposed Mediation

Based on prior research and theory, it is expected that gratitude will impact teacher stress directly as well as through the mediated impact of self-efficacy. Through this study, the researcher proposes that teachers receiving gratitude will decrease teacher stress through two conceptualizations. When conceptualizing stress through Lazarus and Folkman's transactional model, receiving gratitude can be seen as an additional resource that could offset stress. This additional resource would provide teachers with a buffer to combat some of the workplace demands they face, and as a result decrease the likelihood of them experiencing stress symptoms (Lazarus & Folkman, 1984). Given this theoretical approach, it can be assumed that receiving gratitude would result in a direct effect on teachers' perceived stress levels. This will be examined in the current study by examining changes to teacher's perceived stress levels as shown through the PSS-10.

The second conceptualization the researcher will assess through this study is that self-efficacy could be producing a partial mediation effect in this interaction between receiving gratitude and teachers' perceived stress levels (Increased Gratitude -> Increased Self-efficacy-> Decreased Stress), as shown in Figure 2. In order to test this hypothesis, all relationships between the three factors need to be individually established. As explained above, the relationship between receiving gratitude and teachers' stress is hypothesized to be impacted as a result of the transactional model (Lazarus & Folkman, 1984). The other two relationships in this mediation model are focused on the self-efficacy model that was explained above. In the teacher self-efficacy section the relationship between social persuasion directly impacting self-efficacy was introduced (Bandura, 2010). Although there is a lack of research to date on effect of receiving gratitude on self-efficacy, the current study works to make this connection and as a result, expand the literature to classify the receiving of gratitude as a form of social persuasion. This finding would provide evidence of a positive correlation between receiving gratitude and self-efficacy. When looking at the other relationship in this mediation model, research has already demonstrated the buffering effects self-efficacy has on experiences of stress (Jerusalem & Schwarzer, 1992). This research shows the impact increased self-efficacy can have in providing a person with the coping skills to handle stressors and prevent experiences of stress from occurring. As well, it allows for self-efficacy to be seen as a mediating factor between gratitude and stress. The current study poses the possibility of a direct effect of receiving gratitude on stress and a partial mediation effect

of self-efficacy in the model. This study aims to provide a better understanding of the relationships at play in this model.

Figure 2. Gratitude's impact on stress with partial mediation of self-efficacy.

RESEARCH QUESTIONS

Researchers are addressing four primary research questions in this study: (1) What forms of gratitude are expressed from students to teachers? (2) Does receiving gratitude statements from students influence teachers' perceived stress levels? (3) Does receiving gratitude statements from students influence teachers' self-efficacy levels? (4) If the hypothesized relationships proposed in research questions two and three exist, is there evidence that self-efficacy mediated the relationship between receiving gratitude and perceived stress? The first research question is exploratory in nature and will aid in better understanding the intervention and developing research in the future. The second and third questions assess direct relationships between the intervention and variables. The fourth question looks at the relationship between all relationships through a partial mediation model.

THE PROPOSED RESEARCH STUDY

The purpose of this study is to examine the efficacy of the proposed SGTT gratitude intervention and explore what gratitude themes are found in the statements, utilizing both quasi-experimental design and qualitative data analysis. Teachers in the treatment group will be those who work in schools that are randomly selected to receive the intervention. Teachers in the wait-list control group will be given the opportunity to participate in the intervention following the collection of primary post-tests for this study. Schools will be randomly selected to receive the intervention through a random number generator. All teachers in the wait-list control and treatment schools will receive emails before and after the implementation of the intervention asking them to complete the quantitative measures. Further information on participants, measures, intervention structure, and data collection are described below.

Hypotheses

Hypothesis 1

I expect that gratitude statements will have a few major themes that are seen repetitively. Given the information that was gathered through prior work with Vida Clinic on a gratitude project it is expected that the themes might include teacher's motivating or helping a student academically, teacher's personality, teacher's being a role model or source of social support for a student, and teacher's showing they care about their students.

Hypothesis 2

I expect that receiving gratitude will decrease perceived stress. When looking at stress through the transactional model, receiving gratitude can be seen as a resource that would buffer the effects of the demands in teachers' work life. As a result, one would expect that a teacher who has received gratitude from their students would acknowledge this as a resource and as a result, feel better equipped and able to deal with demands placed on them. Their ability to better cope with their demands would reduce stress levels experienced by the teacher.

Hypothesis 3

I expect that receiving gratitude will increase teacher self-efficacy. Receiving gratitude is predicted to be seen as a form of social persuasion. Social persuasion has already been accepted throughout the literature to have a positive relationship with self-efficacy. As a result, if receiving gratitude can fall under the pillar of social persuasion, the literature indicated it will have a strong positive correlation with self-efficacy.

Hypothesis 4

I expect that self-efficacy will partially mediate the relationship between receiving gratitude and decreased perceived stress levels. It is expected that receiving more gratitude will lead to increased self-efficacy, which in turn will lead to decreased stress. When teachers receive gratitude statements from their students, this is hypothesized to increase teachers' self-efficacy. Based on previous research, it is expected that this increase in teacher's self-efficacy will decrease their perceived stress.

Structure of The Gratitude Project Intervention

In the following section, I will introduce the structure of the gratitude intervention and what the intervention will entail. The intervention itself will involve students writing gratitude statements about teachers at their school. These statements will be posted in a common space in the school building to highlight the communal gratitude towards teachers and bring awareness to the impact of gratitude. As well teachers will receive a scanned digital copy of their individual statements by email at this time. These statements work to elicit true opinions and appreciation from students by giving students the power to write about any teacher they would like, allowing them to express gratitude to a teacher who had made an impact in their life instead of eliciting forced feedback on specific teachers. The gratitude statement prompts (Figure 3) will be handed out to every student during their advisor period. Advisory teachers will be given a script to read to the students that provides a brief explanation of what the purpose of this project is and the instructions to complete this project. The prompt asks students a series of open-ended questions, to elicit a gratitude statement to their teacher that includes specific reasons why they appreciate them. These questions are broad enough that students will be able to focus on how their teacher made the most impact in their life and likely allow for a range of themes to be identified in the descriptive analysis of gratitude statements, as seen in figure 3.

Teacher Gratitude Statement

Use this Page to write a shout out to one of your favorite teachers. Please write their name on the back only. Feel free to decorate or personalize this statement however you would like. It is up to you if you keep it anonymous or sign your name.

What is this person like (personality, teaching style, humor, etc.)? What makes them special? How have they motivated, inspired or helped you?

_____

_____

_____

Figure 3. Gratitude Statement Prompt, Front side

Once students complete their gratitude statement, their advisory teachers will collect them and turn them in at an identified location on their campus. All gratitude statements will then be collected by a researcher and recorded. At this time, the researcher will also ensure that all teachers have received a gratitude statement. If a teacher has not received one the researcher will get in contact with a point person at the school who will discreetly collect gratitude statements for these teachers. A week will be given for the additional collection of gratitude statements. The following week all gratitude statements will be posted in a public area of the school (i.e. cafeteria, front office, entryway) that is determined by the school's administration. The gratitude statement forms will ask students to write the teacher's name on the back of the statement form so that when they are posted people are able to appreciate the general gratitude towards teachers without being able to identify who received the most.

This intervention will be implemented by a doctoral graduate student in the Educational Psychology department at The University of Texas at Austin with previous

research experience working with teacher stress. Additionally, this doctoral student will also be under the supervision of two licensed psychologists, one who specializes in research on teacher stress and the other a school psychologist who oversees the clinical partner, Vida Clinic. Furthermore, partnerships with Vida Clinic will assist in understanding the culture of schools and aiding in best introducing the graduate project.

The proposed intervention will be implemented in conjunction with all mental health care efforts currently taking place on the campuses. As described above all schools in this study are in partnership with Vida Clinic and will be receiving services through them at the time of the study. The proposed intervention was developed with the support of Vida Clinic's founder and is intended to serve as a school-level intervention for teachers that will be implemented in conjunction with other teacher services.

Participants

Participants will be recruited from 16 middle and high schools in the Austin Independent School District (AISD), a large urban school district in central Texas, to participate in the study. Schools will be recruited through a partnership with Vida Clinic, a mental health clinic that works directly with the AISD schools to provide in-school services to teachers, students, and parents. Currently, Vida Clinic serves 43 schools within the AISD. They work in conjunction with school counselors to provide seamless and easily accessible mental health care in the form of individual therapy, group therapy, and crisis work. In addition, they conduct needs assessments, campus-wide training, consultation services, and crisis works to adults within students' lives.

All schools eligible to participate will be receiving services from Vida Clinic at the time of the study. As a result, schools participating in the study will already have mental health resources being provided to teachers in some form (i.e. support groups, individual consultations, school-wide psychoeducation interventions). Additionally, these schools' administrations have a history of being cooperative with interventions focused on mental health and are informed through Vida Clinic about the importance of mental health for teachers. Given this relationship and the school's history of participation in mental health programs, high participation of teachers for the proposed intervention is expected. Furthermore, this partnership will provide connections to administrators in each school to schedule meetings, gauge interests from the administration, and provide a platform to introduce the project to teachers during an in-service teacher workday. The teacher numbers in these schools range from approximately 50 to 120 teachers.

Cluster random assignment will be used to implement the intervention at half of the selected schools. Cluster random assignment is when the subjects are grouped prior to randomization with randomization done at the group level (Acharya, Prakasha, Saxena, & Nigam, 2013). Given that this intervention is a school-wide intervention where gratitude statements will be posted in a public area of the school, there is no way for only a subgroup of the teachers within a school to receive the intervention. Furthermore, given the intermingling between teachers and the closing working quarters, there would be a high chance of contamination, where the control group is impacted by the treatment group if a random assignment was attempted. As a result, participants will be randomized at the school level. Half of the schools will be given the intervention and the other half

will be in the wait-list control condition and have access to the intervention following the collection of primary post-test data (Figure 4). All teachers in the study will complete pre-test measures (demographic questionnaire, perceived stress scale (PSS-10), and teachers' self-efficacy scale(TSES-10)) at the same time prior to any intervention. For schools in the treatment condition, all teachers who meet inclusion requirements will receive the intervention. For both the treatment and wait-list control schools, inclusion requirements will include a teacher who is full-time and teach a mainstream curriculum course (i.e. English, History, Math, Art, Music, etc.). This will decrease the variability of stressors that may be present when working in a more specific or nuanced teaching position (i.e. special education, teacher assistant, administration, librarian).

Two weeks after the intervention at the treatment schools, all teachers (those in the treatment and wait-list control groups) will be asked to complete the primary post-test measures. Following the collection of these primary post-test measures, the waitlist control teachers will receive the intervention, as seen in figure 4. Following the completion of the intervention in the waitlist control groups, all teachers will receive a secondary post-test, which consists of the same measures as the primary post-test. Waitlist control teacher's secondary post-tests will be used to analyze the consistency of the initial results. The results of the treatment groups secondary post-test will be used to analyze the long-term impact of this intervention and if positive effects hold over the additional seven-week time. The timeline for the post-test data collection was selected for two reasons. First, the perceived stress scale asks teachers to assess their stress over the past month. This allows teachers to reflect back on two weeks of having the gratitude

statements posted in the school and having their personalized statements as well as two weeks that follow the collection of gratitude statements in their classroom that may have had some impact. As well, given the studies aim to collect a secondary post-test with the waitlist control the total timeline needed to easily fit within the school semester. The current timeline is just over 3 months which would allow for implementation in all typically scheduled schools.

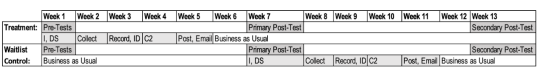

Figure 4. Timeline for the collection of measures for waitlist control and treatment groups.

The aim of this study is to collect completed quantitative material from at least 50 teachers from each of the 8 treatment schools (treatment group n=400), as well as at least 50 teachers from each of the 8 wait-list control groups (control group n=400). This would result in a total of 800 participants (N= 800), with 16 clusters. While a preliminary power analysis was conducted through powerup to determine the same size for detecting an effect at 80% power, it indicated the need for 120 cluster groups (Dong & Maynard, 2013). The limitations and reasoning for the proposed sample size is further explained in the section below, addressing sample size restrictions and dependency.

Implementation Strategy and Timeline

In the following section, I will explain how the proposed intervention will be implemented in schools. IRB approval has been obtained through the University of Texas at Austin for this proposed project. The intervention will take place in sixteen middle and high schools in AISD. Recruitment of schools will occur through meetings with the administration of each school, set up through Vida Clinic. Once sixteen schools have been recruited to participate, a random number generator will be used to randomly assign each school to the treatment or wait-list control condition.

Prior to implementation of the intervention, a researcher will meet with each school's administrator to identify an all-staff meeting where teachers can complete consent forms, demographic questionnaires, and pre-measures including the Perceived Stress Scale (PSS-10) and the Teacher Self-Efficacy Scale (TSES-10). At this time the researcher will also solidify a plan with each school about how to distribute the gratitude surveys to students during their advisory periods, obtain lists of all active teachers, and discuss the details on how this intervention can best be implemented in the specific school (i.e. determine where teachers can drop off statements, where statements should be hung, and best way to send emails to teachers). Furthermore, the researcher will work to identify a staff member who the researcher can contact if a teacher does not organically receive a gratitude statement from a student.

The aim will be to have all schools complete pre-measures within a two week period to decrease variability between timelines of implementation. This will limit additional confounding variables from the environment, whether that be school schedule

(i.e. grades being due, state testing) or external factors (i.e. school shootings, policy changes). For schools in the waitlist control condition, all teachers will continue as normal following the completion of pre-measures teachers. For schools in the treatment condition, the researcher will address the teachers in an all-staff meeting directly following the completion of pre-test measures. At this time, the researcher will inform all teachers about the goal of the research, what the intervention entails, provide all necessary information for implementation, and answer any questions.

Following the introduction of the project at the all-staff meeting, the researcher will send the first email to teachers to provide clear instructions and notify them of the timeline. During the first week of implementation, researchers will also distribute gratitude statements to each advisory class to be filled out by students. All gratitude statements will ask the student to identify a teacher and write, what this person is like (personality, teaching style, humor), what makes them special, and how they have motivated, inspired, or helped them. Teachers will be the rest of the first week and the full second week to collect and turn in all statements.

The researcher will collect all gratitude statements from the schools at the beginning of the third week. This week will be spent scanning all gratitude statements and recording them so that they can be descriptively analyzed at a later date. Given that middle and high schoolers will be writing all statements each one will be scanned over to ensure the comments are appropriate and kind in nature. Researchers will also take this week to confirm that all teachers who meet the inclusion requirements have received a gratitude statement from a student. The teachers who do not receive a statement will be

identified at this time and the researcher will reach out to the contact to help elicit additional statements for teachers who did not receive one.

A week will be given to allow for ample time to collect additional statements from students if needed. The contact at each school will have been predetermined and will be someone who is familiar with the teacher and student culture within the school (i.e. counselor). This contact person will identify students who they know have kind things to say about the teachers who did not receive a gratitude statement and ask them to write one. This will be done in a discreet manner and students will not be informed that these teachers did not organically receive one.

During the fifth week of implementation, supplemental gratitude statements will be collected and recorded. All gratitude statements will then be posted in a public area of each school (i.e. front office, entryway, common space). The students will have written the name of the teacher the statement is about on the backside of the paper, so when posted, only the gratitude statements themselves will be seen. When all statements have been posted, teachers will be notified by email that they have personal gratitude statements posted for them to see. In addition, this email will include a digital copy of their personal gratitude statements students wrote about them. Two weeks later another email will ask teachers to fill out post-measures comprised of the PPS-10 and TSES-10. At this time teachers in the waitlist control schools will also receive an email asking them to complete all primary post-test measures. Following the initial implementation of the intervention and primary post-test collection, the waitlist control school teachers will receive the gratitude project intervention following the same timeline. During this time

the initial treatment group will not receive any further intervention and will continue business as usual as seen in figure 4. At week 13, two weeks following the waitlist control group receiving their gratitude statements all teachers (waitlist control and treatment group) will complete the secondary post-test measures (these are the same measures as are collected in the primary post-test collection).

Measures

Demographic Questionnaire. A demographic questionnaire to assess teacher's age, gender, race/ethnicity, number of years in the teaching fields, school grade taught, school subject taught, and school type (middle or high school).

Perceived Stress Scale (PSS-10). The PSS-10 is the most widely accepted perceived stress scale used today (Lee, 2012) and measures the impact of situations in a person's life on their appraisal and perception of stress (Cohen, Kamarack, and Mermelstein, 1994). This scale focuses on feelings and thoughts experienced within the previous month, which for this study will include the two weeks the gratitude statements were posted on campuses as well as the time period they received their personal gratitude. This scale has been used with teachers in a multitude of research (Geng, Midford, & Buckworth, 2015; Machado, Damazio, Borsa, & Silva, 2014), and provides a quick (10 question) self-report survey that is easily collected. Questions are asked on a 5-point Likert scale ranging from 0 (never) to 4 (very often). The higher, the score the more perceived stress the participant is facing (Cohen, Kamarck, & Mermelstein, 1994). In 12 validity studies of the PSS-10, it was shown to have a Cronbach's alpha of >0.70. Additionally, the test-retest reliability in four studies on PSS-10 resulted in a criterion of

>0.70 in all studies (Lee, 2012). The PSS-10 is seen as a credible and widely accepted measure of perceived stress.

Teachers' Self-Efficacy Scale (TSES-10). The TSES was developed by Schwarzer, Schmitz, and Daytner (1999) to assess teachers perceived self-efficacy in job accomplishment, skill development at work, social interaction in the context of school, and coping with job stress. This scale was originally 27 questions and has been condensed down to 10 for convenience. These items are constructed following Bandura's social cognitive theory of self-efficacy (Bandura, 1997). The shortened version is made up of 10 items that focus on the concept of personally being able to do something. With this scale teachers are asked to answer each question with one of the four following responses: 1) not at all true, 2) barely true, 3) moderately true, 4) exactly true. This is considered a valid measure with a Cronbach's alpha between 0.76 and 0.82. In addition, this measure showed to have test-retest reliability of 0.67 and 0.76 after one year and 0.65 after two years (Schmitz and Schwarzer, 2000).

ANALYSIS OF DATA

Preliminary Analysis

Independent samples t-tests will be conducted between the treatment group and the control group on the pretest scores of PSS and TSES. This will be used to determine if the treatment group and control group differ on levels of perceived stress and teacher self-efficacy prior to any intervention. Paired sample t-tests will be conducted between all pre- and primary post-test measures to evaluate if a significant difference is found within the control group and within the treatment group. If significant differences are found in the control group, external factors are likely to be impacting the elevation. If significant differences between pre- and primary post-tests are only found in the treatment group, further analysis will follow to assess if a mediation factor is at play.

Prior to regressions for mediation analysis being tested, assumptions need to be assessed. Assumptions involve assessment of linearity through looking at scatter plots, normality through the goodness of fit test, homoscedasticity of residuals, no measurement error in predictors, independence, skewness, and kurtosis. Given that independence will not be met due to cluster sampling by school, the section below addressing sampling size restriction and dependence rate will address this concern.

Through these paired sample t-test of the treatment group, research question 2 (Does receive gratitude statements from students influence teachers' perceived stress levels?) and question 3 (Does receive gratitude statements from students influence teachers' self-efficacy levels?) will be assessed. If significant differences in the pre- versus primary post-test are established for perceived stress levels and teachers' self-

efficacy through paired sample t-tests, testing for mediation will be done to assess research question 4 (If the hypothesized relationships proposed in research questions two and three exist, is there evidence that self-efficacy mediated the relationship between receiving gratitude and perceived stress?).

Mediation Analysis

In order to test mediation, the relationship between variable X (receiving gratitude) must be a significant predictor of variable M (teacher self-efficacy) and variable M (teacher self-efficacy) must significantly predict variable Y (teacher perceived stress) (Warner, R. M., 2012). These relationships will be tested through ordinary least square linear regression. Once individual relationships are established the indirect effects need to be tested. Although Sobel's test for indirect effects is commonly used, it has been shown to result in low power with a high type 1 error. Due to these issues, I will utilize R, specifically the "RMediation" distribution of products package, to analyze the mediation model (Meeker & Esobar, 1994). This will allow for improved power and maintenance of normal alpha levels. In order to control for the cluster sampling the "bootstrapping" package will be used (Hayes and Scharkow, 2013). McNeish & Stapleton (2014) also recommended the use of bootstrapping to use the standard error correction to protect against type 1 error inflation. This is done through resampling in order to calculate standard errors specifically when there are less than 20 clusters. If an indirect effect is shown that differs from zero then mediation is occurring. A partial mediation, as opposed to a full mediation, will be seen if the pathway C, between variables X and Y, is still significant, however, in a lower magnitude after the mediator (M) is included (Figure 5).

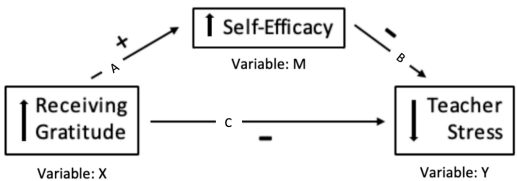

Figure 5. Gratitude's impact on stress with partial mediation of self-efficacy with variables labeled.

Waitlist Control Analysis

Following the primary analysis, the data collected following the waitlist control receiving the intervention will be analyzed. The purpose of this data analysis is two-fold, first to see if the results that were found in the initial analysis with the treatment group can be replicated with the waitlist control group. Secondly, this analysis will look at the impact of the intervention on the initial treatment group at this later point in time. In order to access the first purpose, the preliminary analysis explained above will be conducted again using the primary post-test measures in place of the original pretest measures and the secondary post-test measures in place of the primary post-test measures for the waitlist control group. This will involve conducting paired sample t-tests between the primary post-test and secondary post-test for both the treatment and waitlist control groups. This analysis will assess if the intervention results can be replicated.

In order to assess if the impact of the intervention creates longer-lasting impacts, the original treatment group data will be further assessed. A paired sample t-test will be done between the treatment groups primary post-test scores and secondary post-test scores. If no significant difference is found, the data indicates that this intervention impacts teachers' self-efficacy and/or perceived stress levels 8 weeks out, which is 6 weeks longer than the initial assessment.

Addressing Sample Size Restriction and Dependence

As mentioned above, the analysis of this study faces two challenges due to the nature of cluster sampling and the restrictions that result when conducting group research. The first of those challenges is the difficulty in obtaining a large sample size and the second is the violation of the independence assumption. McCarthy, Whittaker, Boyle, & Eyal, (2017) highlighted that within group-work much of the research violates the independence assumption and researchers commonly fail to address this in their analysis. The literature of group counseling highlights some of the similar challenges this study faces as it is being implemented at the school level and as a result acts as a large group intervention. Due to the nature of their project and the need to implement the intervention to the whole school at once given that gratitude statements are posted in the school, it is not feasible to meet independence assumptions. Given this research design requirement, the researcher will follow the recommendations within this article to inspect the ICC in the data collected to ensure power (McCarthy, et al., 2017). Given previous research indicating the ICC between schools could be high, a calculation of the ICC for this specific data needs to be assessed in order to determine if there is a concern (Fitchett,

et al., 2019). If a high ICC is found, the results of this study should be interpreted with caution (McCarthy, et al., 2017).

While the researcher plans to sample 16 cluster groups for this study, a preliminary power analysis was conducted through powerup to determine the same size for detecting an effect at 80% power, it indicated the need for 120 cluster groups (Dong & Maynard, 2013). This need for a large number of cluster groups is mainly due to the high Intraclass Correlation Coefficient (ICC) between schools predicted in the literature, 34.43% (Fitchett, McCarthy, Lambert, Eyal, Playfair, & Dillard, 2019). Although preliminary power analyses are seen as the gold standard to achieve a correct population size, this power analysis calls for an extremely large number of clusters that due to feasibility and practicality restraints do not seem possible. Vida Clinic, the partner organization, only has 16 middle and high school partner schools that having between 50-100 teachers within each. This limits the possible population and number of clusters for this study. Of course, with unlimited funding and resources, this study would aim to collect data from the recommended 120 clusters. However, at this time this is not possible.

In their review on this topic in The Journal for Specialists in Group Work, McCarthy, et al., (2017) found that although large sample sizes are recommended most of the published work on groups does not include large sample sizes, instead, researchers recognize this limitation that is inherent to group research (McCarthy, et al., 2017). In order to address the concerns with sample size, the researcher will follow the recommendations within this article to inspect the ICC in the data collected to ensure

power. As mentioned above, the ICC will need to be calculated to assess if it is a concern. Another recommendation McCarthy et al. (2017) suggest is to use repeating measures, which this study already utilizes. Although this study follows all recommendations to tackle the challenges group work faces with small sample size and lack of independence, future research should be done to replicate this research with a larger population size with the help of additional funding and resources.

Descriptive Analysis

An exploratory analysis will be utilized to provide the researchers will more knowledge of what factors are at play within the intervention. The context of the gratitude statements will be descriptively analyzed to assess themes through phenomenological data analysis. Phenomenological data analysis began in the early 1900s through the contributions of Edmund Husserl, Martin Heidegger, Maurice Merleau-Ponty, Jean-Paul Sartre, *et al*. (Smith, 2006). Over the years, phenomenology has become a widely accepted qualitative methodology for social sciences (Giorgi, 1985). The focus of phenomenological research is to analyze people's experiences "in order to better be able to come to an understanding of the deeper meaning or significance of an aspect of human experience" (van Manen, 1990, p. 62). This method was chosen given the researcher wanting to understand the perspectives and phenomenons students demonstrate in their gratitude statement. Through this exploratory research analysis, the researcher hopes to gain a better understanding of what students appreciate most about their teachers and are grateful for.

This methodology involves four steps of analysis. The first step is a thorough reading of all of the statements as many times as is necessary to gain a holistic understanding of the data (Giorgi & Giorgi, 2003). The second step consists of each statement being reread and the researchers identifying separate individual thoughts within each statement referred to as units (Giorgi, 1985). Following the identification of units, these units will be clustered into themes with psychological meaning. This theory acknowledges that the researcher and the purpose of the research itself will inherently bias the analysis and interpretation of themes, as all experiences and perceptions are nuanced. The researcher plans to acknowledge their own biases and work to bracket their own bias, setting aside their own assumptions (Ashworth, 1999). After these theme clusters are established, the researcher then works to understand the narrative of what is occurring through the themes. When this is done with data from multiple different participants, as is the case in this study, a general structure description is commonly used (Giorgi, 1985). Interrelated reliability is not commonly utilized with phenomenological data analysis given the acceptance that this approach represents one person's view of how the world is organized and it is unlikely consistency would occur between people's analysis (Marques & McCall, 2005). Instead, when reporting the themes found, the researcher will provide examples of statements that fall into each category to provide transparency to the reader about the process, as seen in the above section on past research. As well, the researcher will have members of the research team review the themes that arise to ensure that the best descriptive categories are created.

This information will aid in understanding the context and implications of the results if this intervention proves to be effective. This data could aid in understanding what themes of gratitude are impactful in reducing teacher stress, and further research could be done to assess the impact of different themes specifically. In addition, understanding the themes and general context of the gratitude statements can help to confirm that the statements teachers are receiving are indeed statements of gratitude and this study is not actually observing a different construct altogether.

SUMMARY AND IMPLICATIONS

Summary

Given the significant amount of stress teachers face, interventions are needed to decrease stress and build resiliency. Although multiple interventions are currently developed and are being implemented there is a need for interventions that do not require funding, trained personnel, or a significant amount of teacher time. The proposed intervention attempts to provide an intervention for teachers without these barriers typical interventions have by providing teachers gratitude statements from their students. This intervention is built of the theoretical scaffolding of Lazarus and Folkman's transactional model of stress and coping (1984) along with the extensive research connecting self-efficacy with buffering the impacts of stress (Jerusalem & Schwarzer, 1992). The goal of this intervention is to increase teacher self-efficacy through the pillar of social persuasion and also provide an additional resource to counter demands placed on teachers. The hypothesize is that SGTT will decrease teacher stress through a partial mediation of self-efficacy. The goal of this intervention is to reduce teacher stress in a way that is easily implementable, cheap, and requiring low time cost to teachers.

Contributions

This study will contribute theoretically to extending the social persuasion pillar of the self-efficacy model to include receiving gratitude. If the study shows a correlation between receiving gratitude and self-efficacy this will begin to build a framework to further develop the pillar of social persuasion to include receiving gratitude. This study

can also work to validate the self-efficacy model as a whole by providing further evidence that social persuasion does correlate directly with self-efficacy.

In a practical realm, this study can provide information on interventions that work to decrease stress in teachers. Given the high levels of stress this population faces, if this intervention leads to a significant decrease in stress, this could provide a low cost and effective way schools could tackle teacher stress. This is important given the lack of funding that is currently being allocated for teachers, yet the consistent need for resources teachers face.

Limitations

One of the main limitations of this study is the generalizability. The subjects in this study are limited to teachers from one specific public-school district in the central United States. As a result, this study is not able to be generalized to teachers in private or specialty school settings (i.e. magnet schools, special education settings, etc.). These other settings might lack the same benefit or experience different effects on teachers' stress when receiving gratitude due to cultural or school differences. Additionally, it is possible that there is a specific aspect of the culture that is having an effect since all the data is being collected within one school district. In order for this study to be more generalizable to all teachers in the United States participants would need to be recruited from a wide range of schools as well as geographical locations. It is also unclear at this point in the study what the demographic breakdown of teachers will be. This is something to consider going forward if the population investigated is representative of

the general population of teachers in the United States in regard to gender, race, sexual orientation, etc.

This study's population of interest is also limited to full-time subject teachers in large middle and high school. These teachers are teaching just one or two subjects and as a result, typically teach a wide range of students. It is possible that this intervention could not be conducted in a school setting where teachers teach have fewer students as it might be harder to collect gratitude statements for each teacher. In addition, there might be an extra impact of the gratitude statements for teachers knowing that the students have multiple teachers to pick from, in an elementary or small school this might not be the case and could affect the impact of the statements. It is also known that secondary school teachers face their own unique sets of challenges, it is unclear what role these factors play in their perception of these gratitudes on their stress; as a result, these findings could not be applied to teachers in other school settings.

Within the methods of this study, one of the significant limitations comes with the follow up of getting additional teacher gratitude statements after teachers have been identified as not having received one. Given that this methodology does not provide a way to ensure that all teachers will receive a gratitude statement, there are issues that arise in reaching out to students in a second wave. One of the major concerns is that teachers will become aware that the staff is having to request to have students write one about them. The other concern is that asking students pointedly to write gratitude to a specific teacher might result in less meaningful or impactful statements. It is unclear how this will affect the results of this study. In future research a more extensive collection of

gratitude statements could be collected, for instance, three per student to ensure that all teachers would likely receive one organically.

Another limitation in the methods section of this study is the small population size. This was mentioned above. Given the high Intraclass Correlation Coefficient (ICC) between schools, 34.43%, the power analysis indicates the need for 120 cluster groups (Fitchett, McCarthy, Lambert, Eyal, Playfair, & Dillard, 2019; Dong & Maynard, 2013). However, due to limitations in the Vida Clinic's number of partner schools as well as feasibility, this study will not be collecting data from 120 groups. This is a limitation of this study and something that future research could address with ample funding and time.

Future Directions

Future studies could extend this research through further analysis of the qualitative themes found in the gratitude statements. Once themes are identified, the more specific analysis could be collected to assess if certain themes have more significant impacts on teacher stress or teacher self-efficacy. This could be important in gaining a further understanding of what types of gratitude have the largest impact on teachers.

Another direction for future research could be examining the different types of gratitude interventions. Given that other studies look at the impact of receiving gratitude, giving gratitude, and self-gratitude, the different types of gratitude could be analyzed in relation to their impact on teacher stress. This could be done by having one participant group complete the methods suggested in this article, one complete daily gratitude journal, and another write gratitudes to a peer. These intervention groups could be

compared to a control in the hope of evaluating which gratitude intervention is most impactful for teachers.

The current study focuses on teachers receiving gratitude statements from students, however; future studies should look for a difference in effect if the gratitude statements are from students, peers, administration, or student's parents. Understanding the impact of the source of the gratitude statements would aid in understanding why they provide a positive impact on teacher stress. This understanding could help schools understand the best ways to implement interventions as well as where to focus funds and time for future research.

In order to further understand one of the limitations in this study, an analysis of the difference in gratitude statements collected in the initial data collection versus those requested for teachers who did not receive a statement could be looked at. This would allow an assessment if allowing students to choose who they want to write about has an impact on the statements and as a result the impact on the teachers. This research could also assess if the impact on teachers differs or if teachers are able to tell a difference in gratitude statements.

Appendix (or Appendices)

Appendix A- Demographic Questionnaire

Demographic Questionnaire

Please identify your age:
- 19-29
- 30-39
- 40-49
- 50-59
- 60 or older

What gender do you identify with?
- Female
- Male
- Transgender Female
- Transgender Male
- Other (please specify):_____

What racial/ ethnic identity do you most identify with?
- American Indian or Alaska Native
- Asian or Asian American
- Black or African American
- Hispanic/ Latino/a
- Native Hawaiian or Other Pacific Islander
- White

How many years have you been teaching?
- Less than a year
- 1-2 years
- 2-5 years
- 5-10 years
- More than 10 years

What grade/s do you teach?
- 6th
- 7th
- 8th
- 9th
- 10th
- 11th
- 12th

What subject/s do you teach?
- Math
- English
- Social Studies/ History
- Science
- Physical Education or Sports
- Music
- Art
- Electives
- Other (Please Specify):_____

What level do you teach?
- Grade level
- Advanced
- IB
- AP

Appendix B- Perceived Stress Scale

PERCEIVED STRESS SCALE

The questions in this scale ask you about your feelings and thoughts during the last month**. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.**

Name _____ Date _____

Age _____ Gender (*Circle*): **M F** Other _____

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2. In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3. In the last month, how often have you felt nervous and "stressed"?	0	1	2	3	4
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
5. In the last month, how often have you felt that things were going your way?	0	1	2	3	4
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7. In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8. In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9. In the last month, how often have you been angered because of things that were outside of your control?	0	1	2	3	4
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

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The PSS Scale is reprinted with permission of the American Sociological Association, from Cohen, S., Kamarck, T., and Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24,* 386-396.
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Appendix C- The Teacher Self-Efficacy Scale

The Teacher Self-Efficacy Scale (TSES-10)

Response format:
(1) not at all true, (2) barely true, (3) moderately true, (4) exactly true

1. I am convinced that I am able to successfully teach all relevant subject content to even the most difficult students. ☐
2. I know that I can maintain a positive relationship with parents even when tensions arise. ☐
3. When I try really hard, I am able to reach even the most difficult students. ☐
4. I am convinced that, as time goes by, I will continue to become more and more capable of helping to address my students' needs. ☐
5. Even if I get disrupted while teaching, I am confident that I can maintain my composure and continue to teach well. ☐
6. I am confident in my ability to be responsive to my students' needs even if I am having a bad day. ☐
7. If I try hard enough, I know that I can exert a positive influence on both the personal and academic development of my students. ☐
8. I am convinced that I can develop creative ways to cope with system constraints (such as budget cuts and other administrative problems) and continue to teach well. ☐
9. I know that I can motivate my students to participate in innovative projects. ☐
10. I know that I can carry out innovative projects even when I am opposed by skeptical colleagues. ☐

Appendix D- Gratitude Prompt

FRONT:

Teacher Gratitude Statement

Use this Page to write a shout out to one of your favorite teachers. Please write their name on the back only. Feel free to decorate or personalize this statement however you would like. It is up to you if you keep it anonymous or sign your name.

What is this person like (personality, teaching style, humor, etc.)? What makes them special? How have they motivated, inspired or helped you?

_____

_____

_____

_____

_____

BACK:

One of my favorite teachers is:

_____

Class Subject: _____

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